NextGen Components,Inc.

PART CODE: 2SC3356S20SR23

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	R0608- 2SC3356S20SR23	
DATE	June 8, 2024	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Plastic-Encapsulate Transistors, 3 Pads, Case SOT-23 2SC Series, Transistor Type NPN, h_{FE} Rank Range (R23) 50~100 Collector-Base Voltage 20V Max. Collector Current 100mA Max. Operating Temp. Range -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	MDD Diodes/2SC3356- R23	
PART CODE	2SC3356S20SR23	

VENDOR APPROVE	
Issued/Checked/Approved	NextGen Components, Inc. Mandy Xu; NextGen Components, Inc. Ruby Zhang; NextGen Components, Inc. Jack Zhang
DATE: June 8, 2024	

CUSTOMER APPROVE
DATE:

NextGen Components, Inc. sales@NextGenComponent.com www.NextGenComponent.com

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PART CODE: **2SC3356S20SR23**

SMD TRANSISTORS 2SC SERIES CASE SOT-23

MAIN FEATURE

- Epoxy Meets UL-94 V-0 Flammability Rating
- DC Current Gain: h_{FE}=50~250 @V_{CE}=10V, I_C=20mA
- Low Noise, High Gain and High Power Gain
- Surface Mount Package Ideally Suited for Automatic Insertion
- REACH/RoHS III Complaint and Halogen Free
- Cross Main Competitor Parts in Market

APPLICATION

- For SMD application

ELECTRICAL CHARACTERISTICS

- See Page 4~ Page 5 For Different Part Code

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate Pat Code When You Order Or RFQ For Custom Specification

PART CODE GUIDE

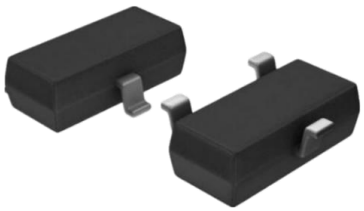
RFQ
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
2SC	Product Series Code	SMD Plastic-Encapsulate Transistors 2SC series
3356	Specification Code	For Original Part Number 2SC3356
S2	Case Code	S2: Case SOT-23
0S	Internal Control Code	Custom letter A~Z, a-z or Digits (0-9)
R23	hFE Rank Range Code	R23: 50~100; R24: 80~160; R25: 125~250

SMD TRANSISTORS 2SC SERIES CASE SOT-23

DIMENSION (Unit: Inch/mm)

Image for reference

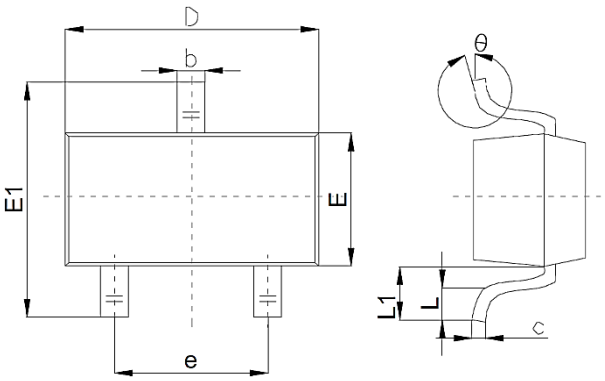


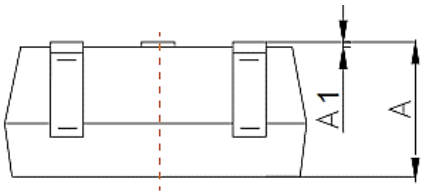
Marking:

See Page -4 Marking List

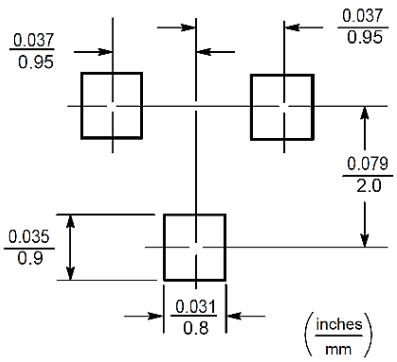
For different Part code

SOT-23





Recommend Pad Layout



Symbol	Value (mm)		
	Min.	Typ.	Max.
A	0.9		1.4
A1			0.10
b	0.30		0.50
c	0.08		0.20
D	2.80	2.90	3.10
E	1.20		1.60
E1	2.25		2.80
e	1.8	1.9	2.00
L	0.10		0.50
L1	0.40		
ϴ	0°		10°

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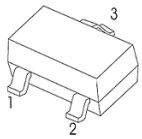
PART CODE: **2SC3356S20SR23**

SMD TRANSISTORS 2SC SERIES CASE SOT-23

CLASSIFICATION OF hFE – For Different Part Code

PART CODE	RANK CODE	RANK RANG	MARKING	PIN FUNCTION
2SC3356S20SR23	Q	50~ 180	R23	 1. Base 2. Emitter 3. Collector
2SC3356S20SR24	R	80~ 160	R24	
2SC3356S20SR25	S	125~ 250	R25	

MECHANICAL DATA

CASE	TERMINALS	POLARITY	MOUNTING POSITION	WEIGHT PER PIECE
JEDEC SOT-23 Molded Plastic Body	Solder Plated, Solderable Per MIL-STD-750, Method 2026	Polarity Symbol Marking On Case	Any	0.00019 Ounce, 0.0055 grams

MAXIMUM RATINGS - @ 25 °C

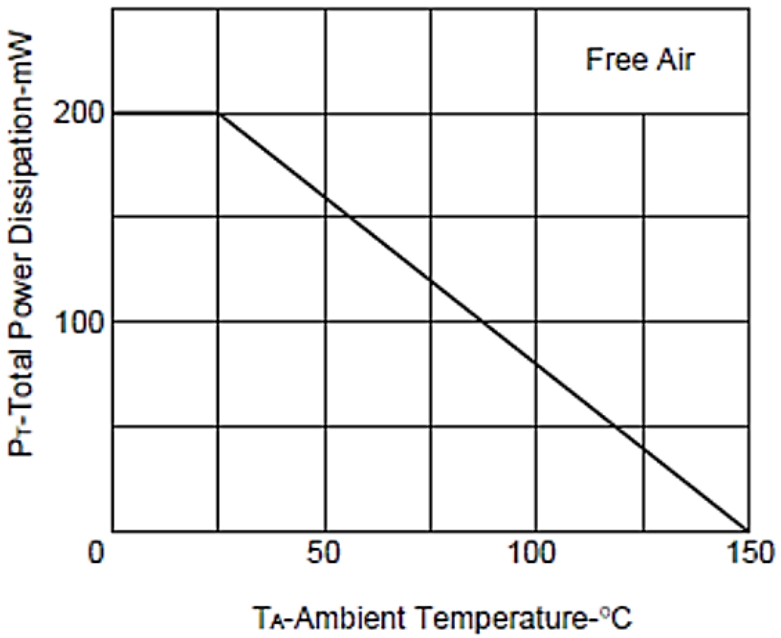
PARAMETER	SYMBOLS	VALUE	UNITS
		LIMIT	
Collector to Base Voltage	BV_{CBO}	20	Volts
Collector to Emitter Voltage	BV_{CEO}	12	Volts
Emitter to Base Voltage	BV_{EBO}	3	Volts
Collector Current -Continuous	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	+150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

ELECTRICAL MAXIMUM RATINGS - @ 25 °C

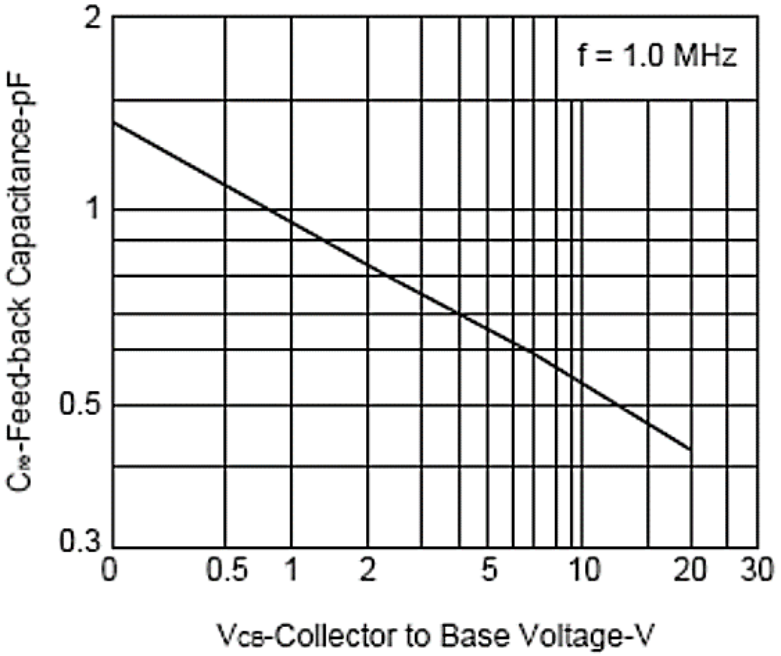
PARAMETER		SYMBOLS	VALUE			UNIT	TEST CONDITION
			MIN.	TYP.	MAX		
Collector-base Breakdown Voltage		$V_{(BR)CBO}$	20			V	I_C= 10μA, I_E=0
Collector-emitter Breakdown Voltage		$V_{(BR)CEO}$	12			V	I_C= 1mA, I_B=0
Emitter-base Breakdown Voltage		$V_{(BR)EBO}$	3			V	I_E= 10μA, I_C=0
Collector Cut-off Current		I_{CBO}			1	μA	V_{CB}=10V, I_E=0
Emitter Cut-off Current		I_{EBO}			1	μA	V_{EB}= 1V, I_C=0
DC Current Gain	2SC3356S20SR23	h_{FE}	50		100		V_{CE}=10V, I_C=20mA
	2SC3356S20SR24		80		160		
	2SC3356S20SR25		125		250		
Transition Frequency		f_T		7		GHz	V_{CE}=10V, I_C=20mA
Noise Figure		N_F			2	dB	V_{CE}=10V, I_C= 7mA, f = 1GHz

TYPICAL CHARACTERISTIC CURVES - For Reference Only

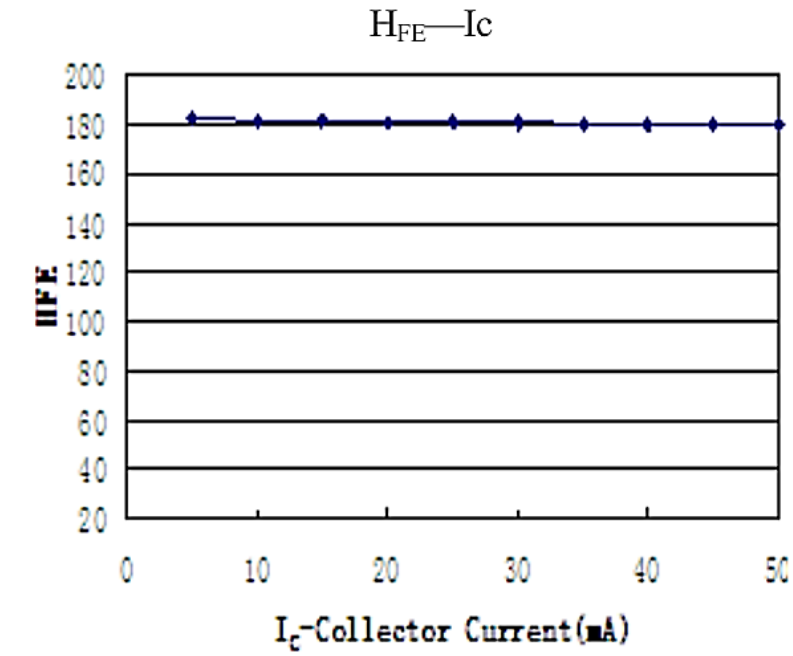
Ptot—T_A

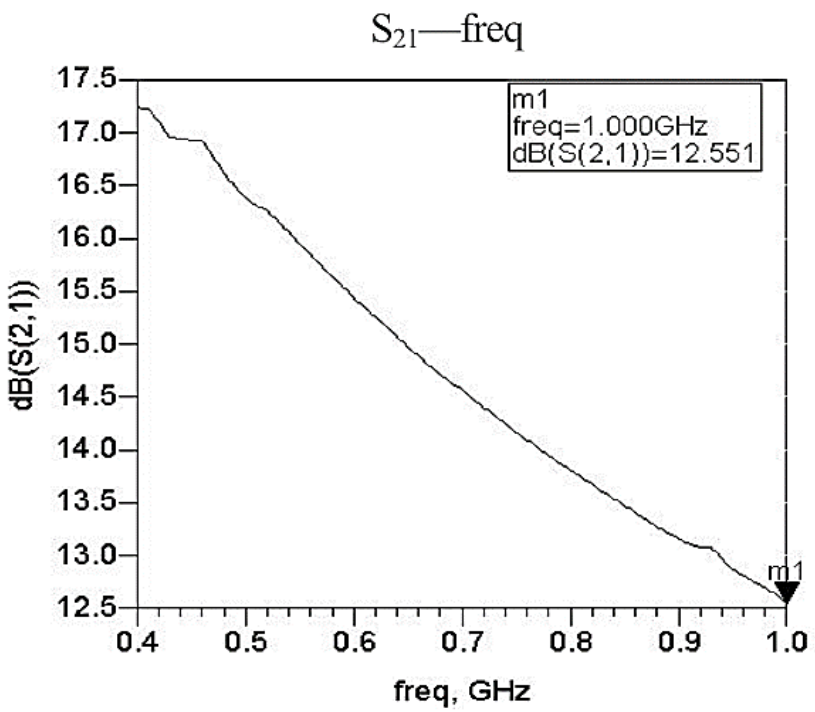


C_{re}—V_{CB}

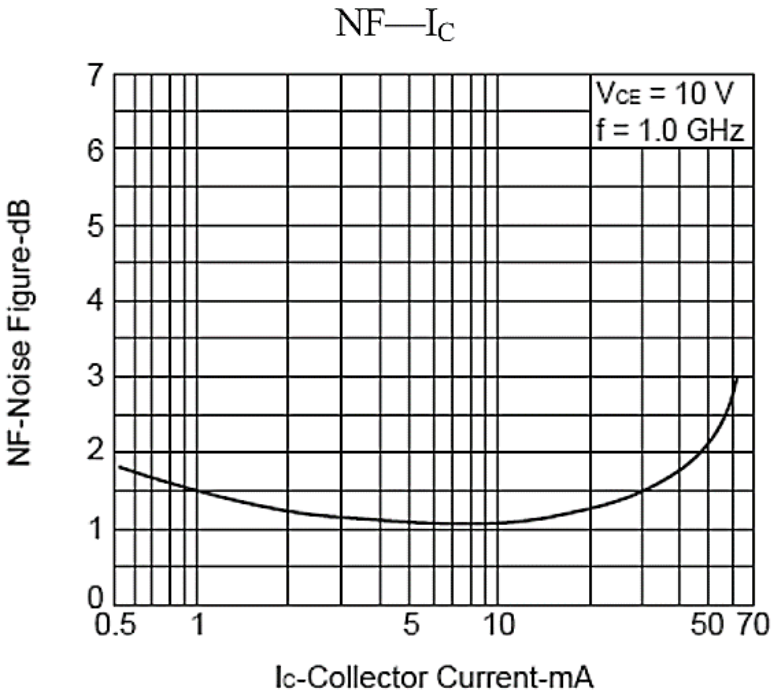


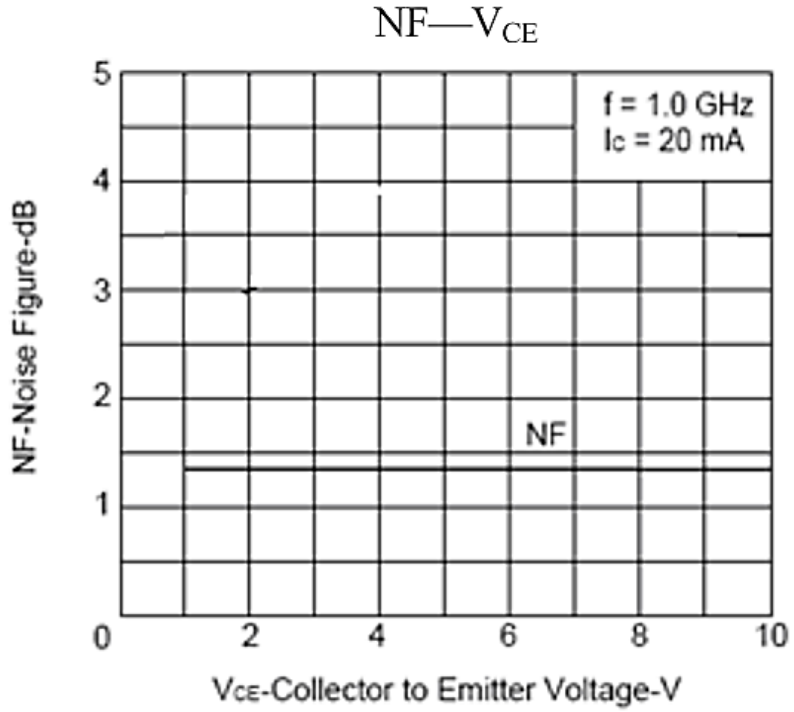
TYPICAL CHARACTERISTIC CURVES - For Reference Only





TYPICAL CHARACTERISTIC CURVES - For Reference Only

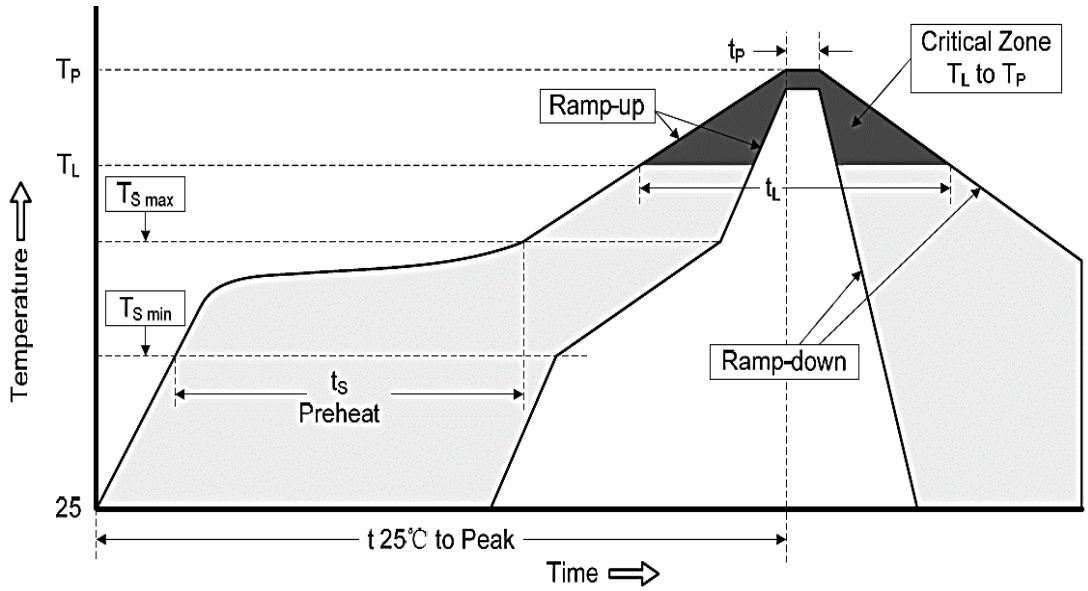




RELIABILITY

Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	T_A=100°C for 1000 Hours at V_R=80% Rated V_R	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, T_A=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	T_A=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

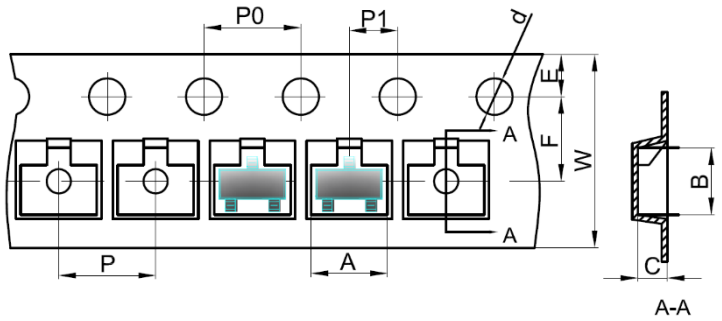
SUGGESTED REFLOW PROFILE - For Reference Only

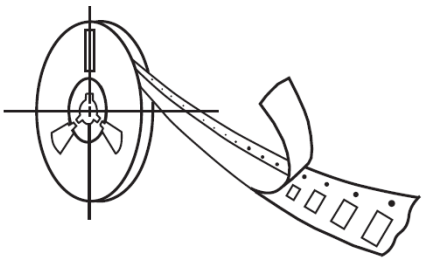


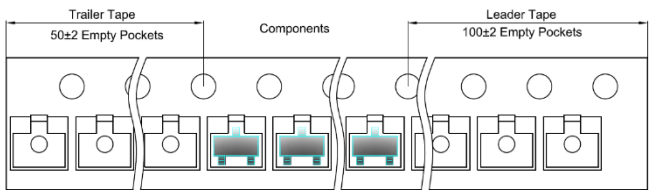
PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3℃/second Max
Preheat	Temperature Min (Ts Min.)	150℃
	Temperature Max (Ts Max.)	200℃
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (TL)	217℃
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 ℃
Time within 5℃ of actual Peak Temperature (tp)		20 ~ 40 seconds
Ramp-down rate		6 ℃ /Second Max.
Time 25 ℃ to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

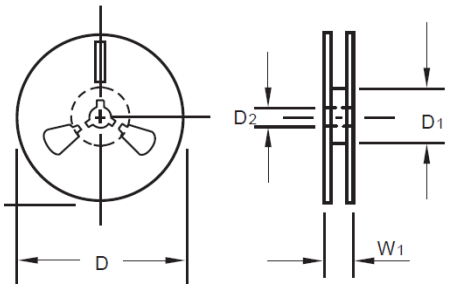
TAPE/REEL - Unit: mm

All Devices are packed in accordance with EIA standard RS-481-A and specifications.









ITEM	SYMBOL	TOLERANCE	SOT-23
Carrier width	A	0.1	3.15
Carrier Length	B	0.1	2.77
Carrier Depth	C	0.1	1.22
Sprocket hole	d	0.05	1.55
7” Reel outside diameter	D	2.0	178.00
7” Reel inner diameter	D1	Min.	54.4
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.00
Reel width	W1	1.0	19.50
MPQ/Reel	3000pcs/Reel		

IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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